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Assessment of First Aid Knowledge and Decision Making of Coaches of Youth Soccer

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ASSESSMENT OF FIRST AID KNOWLEDGE AND
DECISION MAKING OF COACHES OF YOUTH SOCCER

A Thesis

Presented to

The Faculty of the Department of Kinesiology

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Lynnette Castro

May 2010

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The Designated Thesis Committee Approves the Thesis Titled

ASSESSMENT OF FIRST AID KNOWLEDGE AND
DECISION MAKING OF COACHES OF YOUTH SOCCER

by

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ABSTRACT

ASSESSMENT OF FIRST AID KNOWLEDGE AND DECISION MAKING OF COACHES OF YOUTH SPORTS

by Lynnette Castro

The purpose of this study was to assess the first aid knowledge of coaches of youth soccer and to assess the decision making ability of those coaches in hypothetical athletic situations. The study investigated coaches with passing scores on the First Aid Assessment test (FAA) and first aid and CPR certification; years of coaching experience and scores on the FAA; the difference between years of coaching experience and return to play; the relationship between first aid and CPR certification and education level and the scores on the FAA and education level. Coaches completed a FAA test, Game Situation Data Sheet (GSDS), and a brief demographic information sheet.

Thirteen (11.4%) coaches out of 114 coaches earned a passing score on the First Aid Assessment test. Of the 114 coaches that completed the demographic data sheet, 31 (27%) reported being current first aid certified and 24 (21%) reported being current CPR certified. Of those 55 coaches, only 13 coaches passed the FAA test. This shows that coaches currently certified in first aid and CPR were more successful in passing the FAA test. A coach's decisions to return an injured athlete to competition are dependent upon the game situation and the rank of player involved (starter, backup, or bench player).

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CHAPTER 1

Introduction

Each year in the United States, approximately 30 million children and teenagers participate in organized sports (Adirim & Cheng, 2003; Cassas & Cassettari-Wayhs, 2006). The number of athletic injuries reported for youths between the ages of 5 and 17 has increased proportional to the rate of participation, and has become a concern of pediatric and sports medicine professions (Radelet, Lephart, Rubinstein & Myers, 2002). Soccer is the most popular sport worldwide and has increased in popularity in the United States in the last 20 years, especially among youths. According to the National Electronic Injury Surveillance System in 2000, an estimated 145,000 youth soccer related injuries occurred (Adams & Schiff, 2006). In addition, Whitaker, Cunningham, and Selfe (2006) identified that coaches were the most likely people to be responsible for providing first aid during training sessions. Given the large number of reports on soccer injuries and that coaches are the most likely individual to attend to these injuries, knowledge of first aid and emergency care by coaches is imperative to ensure proper health care and referral.

More than 3.5 million youth coaches in the United States instruct children in sport; however, no national certification program exists (McLeod, Schwartz & Bay, 2007). It is critical that youth sports coaches be knowledgeable about conditioning, sports skills, physiology, and psychology, because young children are at a developmental state, both mentally and physically, in which they are susceptible to injury (Kimiecik, 1988). Most states require coaches to maintain current certification in first aid and

cardiopulmonary resuscitation (CPR) (Hage & Moore, 1991). Coaches are sometimes forced to treat athletic injuries due to the lack of available medical personnel, and likewise, they may be forced to make medical decisions that exceed their educational training (Ransone & Dunn-Bennett, 1999). Coaches may mistreat or misdiagnose an acute or overuse injury. Acute and overuse injuries may cause permanent changes of bone growth and are biomechanically at a disadvantage due to muscle imbalances (Radelet et al., 2002). Thus assessment of coaches' knowledge of injury is important to ensure quality health care for youth sport participants.

Justification

Soccer is the most popular team sport worldwide and continues to provide many young people an opportunity for healthy exercise (Adams & Schiff, 2006; Committee of Sports Medicine and Fitness, 2000). In 2002, the Soccer Industry Council of America estimated that 15.2 million youths younger than 18 years of age participated in soccer. In 2000, the National Electronic Injury Surveillance System estimated 144,604 soccer related injuries occurred for children and adolescents aged 5-19 years (Adams & Schiff, 2006). Children and adolescents experience physiological, developmental, and psychological changes with their bodies. Children and adolescents in sport have specific medical needs given the skeletal immaturity and the presence of growth cartilage at the epiphyseal plates. Medical professionals who understand the developmental differences in youth athletes are important in proper assessment, referral, and return to play criteria to ensure the health of the player.

A majority of organized sports do not employ medical professionals during practices and games, leaving the coaches responsible for evaluating and treating athletic injury. By law, adults working in youth sports have a duty to ensure the children's safety. If a club allows an unqualified person to administer first aid which results in a serious injury, the club and individual are liable (Whitaker et al., 2006). However, even if coaches possess adequate first aid knowledge, this does not ensure that they will provide appropriate first aid or can assess chronic or acute non-life threatening injuries. Coaches have many roles to fulfill, such as developing a winning team, issuing and collecting equipment, and maintaining practice and event facilities (Ransone & Dunn-Bennett, 1999). As a result, a conflict of duties is likely to occur for the coach. If a conflict of duties exists, then the quality of medical care provided by coaches may decrease (Dunn, 1995).

The California Youth Soccer Association-Northern (CYSA-N) is a community based soccer league that offers a complete range of youth soccer opportunities for children of all ages and abilities. Each league has individualized requirements regarding coaching licensure. The leagues require that all coaches have some type of coaching license when applying for a coaching position, yet specific ability to apply knowledge to injured athletes is not currently understood (CYSA Coaching, 2007). Tim Nixon, who is the District-II Coaching Director for the CYSA-N, states in an email:

As for club soccer [first aid and CPR certification] it is not mandatory, but it's mandatory that we carry a medical release form. We also have a CYSA team manual that covers first aid as a guide only. CYSA is responsible for the guide

and recommends consulting a physician or calling 911 for emergencies. (personal communication, December 2, 2007).

Given the individualized licensure requirements, and minimal recommended medical response, youth athletes may not receive prompt, appropriate medical assistance. Poor medical attention may lead to improper healing that may affect the future abilities of the athlete.

Statement of Purpose

The purpose of this study was to assess the first aid knowledge of coaches of youth soccer and to assess the decision making of these coaches of youth soccer in hypothetical athletic situations involving competition and injured athletes.

Research Questions

1. Will youth soccer coaches who have first aid and CPR certification be more successful in passing First Aid Assessment test than those who do not have first aid and CPR certification?
2. Do coaches who have more years of experience in coaching score higher on the First Aid Assessment test than those with fewer years of experience?
3. Is there a difference when coaches return an injured athlete to competition based upon years of coaching experience?
4. Is there a correlation between first aid and CPR certification and education level?
5. Is there a difference in the First Aid Assessment scores based upon the educational background of the coach?

Hypotheses

1. Coaches who have first aid and CPR certification will have passing scores on the First Aid Assessment test.
2. Coaches who have more years of coaching experience will score higher on the First Aid Assessment test than coaches who have fewer years of coaching experience.
3. Coaches that have more years of coaching experience will return an injured athlete to competition more often than coaches with fewer years of coaching experience.
4. Coaches who have a higher education level will be more likely to have first aid and CPR certification.
5. Coaches with a higher educational level will score higher on the First Aid Assessment test.

Delimitations

The delimitations for this study were:

1. Only coaches whose emails were on the league website were selected to participate in the study.
2. The test will be administered during the spring sport season.
3. Coaches of only the CYSA District-II will be tested due to time testing restraints.

Limitations

The limitations of the study reflect the effect of delimitations. The results may be compromised by the following limitations:

1. Differences in first aid and CPR certification course content and personal experience may exist.
2. Coaches whose email addresses were on their leagues website were contacted to participate in the survey.
3. Coaches might not have been experienced or educated in aspects of first aid, which may be reflected in the scores.
4. Coaches might have felt a time constraint and did not complete parts of the survey.
5. Due to access constraints, only coaches from the CYSA District-II will be tested.

Assumptions

The following assumptions were made for this study:

1. The coaches answered each question honestly and gave their best efforts when completing the questionnaires.
2. The coaches' responses to decision making scenarios simulated actual situations.
3. The questionnaires used in the study were reliable and valid tools for measuring coaches' first aid knowledge.

Definition of Terms

There are several terms that have been used throughout the thesis. These terms and their definitions are:

Cardiopulmonary Resuscitation (CPR). A basic emergency method of lifesaving with artificial respirations and chest compressions used to restart the heart and lungs (Glanze, W.D., Anderson, K.N., & Anderson, L.E., 1992)

Class 1. Participants under 10 through under 19 who have developed a high level of soccer skills and want to compete at the highest level (Abronzino League District-II, 2010).

Class 3. Participants under 9 through under 19 who are interested in competitive soccer with emphasis on player development (Delgado League District-II, 2010).

Coach. An adult 18 years or older who is registered with the CYSA and has a US Youth Soccer Membership Pass (CYSA Team Manual, 2010).

First aid. The administration of immediate medical care to an injured or acutely ill patient before the arrival of a physician or advanced life support and transport to a health-care facility (Venes, D. et al., 1997).

Injury. Trauma or damage to some part of the body (Venes, D. et al., 1997).

Recreational. Participants under 6 through under 16 who want to emphasize on player development and soccer enjoyment (Recreational Soccer, 2010).

Youths. A player who has not reached the age of 19 years old (CYSA Team Manual, 2010).

Summary

Each year athletes of all ages and abilities participate in sports where the potential for injury exists. Therefore, quality medical care needs to be available to those participating in athletics (Dunn, 1995). The information in this thesis is to provide insight to youth soccer coaches the importance of requiring first aid and CPR certification, and the importance of maintaining that knowledge in case an athlete is injured.

CHAPTER 2

Review of Literature

This chapter reviews the quantitative and qualitative literature pertaining to the issues of youth soccer injuries and the knowledge coaches have about first aid and cardiopulmonary resuscitation. First, a brief history about first aid and CPR; next, the research on injuries among youth soccer players, followed by, the research on the qualifications of first aid and CPR among coaches. Last, will be research on coaching education. The purpose of the study was to assess the first aid and CPR knowledge of youth soccer coaches.

First Aid and Cardiopulmonary Resuscitation

First aid and CPR are types of emergency care that are rendered to an injured individual. First aid is the immediate help given to a victim of injury or sudden illness until appropriate medical help arrives, or the victim is seen by a healthcare provider (National Safety Council, 2007). The first recorded history of first aid dated back to 1099, when a religious order of knights were trained to administer medical treatment to the wounded during the crusades (Sovrin First Aid and Health & Safety Training, 2007). It was not until 1878 when two military officers, Shepherd and Duncan, established the concept of teaching first aid skills to civilians. Shepherd wrote a comprehensive series of lecture notes of first aid skills for a wide range of medical emergencies. Shepherd and a medical doctor ran the first public first aid course at a church in Woolwich, London in 1878. The first aid class also provided an examination of competence at the end of the

course. The practice of providing a competency exam at the end of a first aid course has continued to the present day (Pearn, 1994).

Cardiopulmonary resuscitation is a basic life support procedure for a victim who is not breathing and has no pulse present; it consists of rescue breathing combined with chest compressions. In 1740, the Paris Academy of Sciences officially recommended mouth-to-mouth resuscitation for drowning victims. In 1891, Dr. Friedrich Maass performed the first equivocally documented chest compressions in humans. He was able to resuscitate two patients who suffered cardiac arrest during chloroform anesthesia. In 1903, Dr. George Crile reported the first successful use of external chest compressions in a patient who suffered a cardiac arrest during a thyroidectomy. However, cardiopulmonary resuscitation was not developed until 1960 (Tucker, Savitt, Idris & Redberg, 1994; American Heart Association, 2007). In 1960, Dr. Kowenhoven was credited with introducing closed chest compressions. The theory behind this technique was that the patient receives oxygen, which is transported to the brain by the blood circulating from the chest compressions (CPRawareness.org, 2007). The American Heart Association began a program to acquaint physicians with closed-chest cardiac resuscitation, and they became the forerunner of CPR training for the general public. In 1966, the American Red Cross established standardized training and performance standards for CPR. This standard is still present today because effective CPR can double a victim's chance of survival (American Heart Association, 2007). According to the American Heart Association (2007), 75 to 80 percent of all cardiac arrests happen at home, so training to perform cardiopulmonary resuscitation can mean the difference

between life and death. If CPR is not provided, a sudden cardiac arrest victim's chances of survival will fall 7 to 10 percent for every minute CPR is delayed.

The necessity for first aid and CPR are also present in youth sports. Approximately 30 million youths in the United States participate in sports with approximately 145,000 injured yearly. Specifically, youth soccer has similar ratios of injury to the number of individual's participation. Therefore, parents and coaches who are consistently present at games and practices should have basic knowledge of first aid and CPR in order to treat or triage injured athletes (Barron, 2004).

Youth Soccer Injuries

Adams and Schiff (2006) and the Committee on Sports Medicine and Fitness (2000) estimated that between 144,000 and 160,000 child and adolescent soccer related injuries occurred annually between 1992 and 2000. The most common areas injured were in the lower extremities (Adams & Schiff, 2006; Committee on Sports Medicine and Fitness, 2000; Kakavelakis, Vlazakis, Vlahakis, & Charissis, 2003). The most common body areas that were injured were the knee and the ankle (Adams & Schiff, 2006; Kakavelakis et al., 2003; Radelet et al., 2002). When reviewing the studies, a wide variety of injuries, such as sprains, strains, contusions, fractures, dislocations, tendonitis, and overuse, occurred to the lower extremities. The most common type of injuries sustained were sprains and strains to the knees and ankles (Adam & Schiff, 2006; Kakavelakis et al, 2003).

Radelet et al. (2002) identified the face as the most frequently injured body part. No explanations on the type of injuries to the face or how the injuries occurred were

provided. The injury rate for 7 to 13 year old children who participated in community organized sports, such as baseball, softball, soccer, and football were investigated.

Radelet et al. indentified that throughout the sports in the study, contusions were the most frequent type of injury. Coaches who are unaware of the type of injuries or possible complications can compromise the athlete's return to play.

The majority of the studies that investigated soccer injuries were on males ranging in ages from 5 to 23. Adams and Schiff (2006) investigated soccer injuries between gender and age. Overall, boys between the ages of 5 and 19 had the most soccer related injuries compared to girls. Contrary, Kibler's (1993) prospective study on the incidences and types of injuries that contribute to youth soccer injuries identified two articles by Sullivan, Gross, Grana, and Garcia-Moral (1980) and Nilsson and Roass (1978), that suggest females have the highest incidence of injuries. There is no clear consensus between the two research articles by Kibler (1993) and Adams and Schiff (2006), on whether males or females sustain more injuries during competition.

Consistency between whether more injuries occur during practice or during games is lacking in the literature. Kakavelakis et al. (2003) established that more injuries occurred during practices, which conflicts with Radelet et al. (2002). Radelet et al. concluded that injury rates were higher in games than in practices. One theory was that games were well attended by the athletes and were more aggressive.

Coaches of youth soccer need to have knowledge about different types of injuries and be able to recognize these injuries in the youth athlete. Knowledge of the different

types of injuries that youth soccer athletes incur will help coaches recognize injuries and to reduce the prevalence and severity of these injuries in their athletes.

First Aid Qualifications

When the appropriate medical personnel are not provided during games or practices, coaches are then forced to act as the primary care provider for the injured athlete (Flint & Weiss, 1992; Ransone & Dunn-Bennett, 1999; Redfearn, 1980). Coaches have many responsibilities: developing a winning team, managing athletic equipment, maintaining practice and event facilities, and scheduling travel arrangement. As a result of these duties, conflict may occur between work responsibilities and the desire to win, reducing the quality of medical care provided by coaches (Ransone & Dunn-Bennett, 1999).

Many organizations recommend but do not require coaches to get certified in first aid and CPR. However, simply possessing sufficient first aid and CPR qualifications does not ensure that coaches will provide adequate first aid care (Ransone & Dunn-Bennett, 1999; Whitaker et al., 2006). Ransone and Dunn-Bennett (1999) discovered that 39 percent of coaches achieved passing scores on their first aid test and 92 percent of them were certified in first aid. The coaches who passed the first aid test tended to return injured players to the game, whereas those who failed decided to keep players out of the game. One reason could be that the coaches that lacked medical knowledge did not want to return an injured player fearing that the injury may become worse.

Redfearn (1980) questioned 262 coaches in Lansing, Michigan on education, emergency medical training, CPR training, experience with life threatening injuries, self

appraisals of skills in management of life threatening injuries, and opinions on proximity of medical authority. The results indicated that the coaches reported a low level of medical and first aid training, and only 44 percent of the coaches felt they had the capacity to manage a medical emergency. Cunningham (2002) had similar results when he mailed a questionnaire to 250 youth football (soccer) leagues in the United Kingdom, requesting information about years spent coaching, first aid certification, medical equipment available, injury recording, parental consent to treat, injury scenarios, and injuries/illnesses they felt comfortable to manage. Over half of the respondents (61%) did not possess a current first aid certification, and only one third of the respondents held a current First Aid Emergency Certificate. Cunningham (2002) suggested that the coaches felt confident in dealing with simple cuts and bruises, nose bleeds, muscle strains, and minor bleeding. However, three quarters of the coaches did not feel competent enough to manage a diabetic attack, asthmatic attack, fracture, or an epileptic attack. Youth soccer coaches need to be armed with the knowledge of how to handle these situations for the continued and effective treatment of injuries using first aid.

Coaching Education

Cunningham (2002) and Redfearn (1980) suggest that coaches who do not have the proper qualifications also lack the knowledge and confidence to perform and understand first aid. The problem is that unqualified and uneducated coaches are rendering first aid care to injured athletes (Redfearn, 1980). On occasion, the proper medical personnel are not available and since coaches may be required to act in a first aid capacity, they should be educated in this area. Hage and Moore (1981) studied the ability

of high school coaches to provide medical care for athletic injuries. The authors discovered that 80 percent of the coaches provided first aid care and 60 percent of the coaches decided if an injured athlete should return to competition after care. Hage and Moore stated that certifying coaches in emergency medical care techniques is not a new concept. According to AAHPERD in 1968, coaches completed college-level courses in the study of kinesiology and physiology. Coaches should have some knowledge of sports medicine if their schools or leagues do not provide the appropriate medical coverage (Hage & Moore, 1981), this does not show coaches have adequate knowledge to make return to play decisions.

Kimiecik (1988), in his research, states that well trained coaches can reduce the number of injuries, but there is no nationally accepted system of certification for coaches in the United States. He continues to state that the inability of coaches to recognize a subtle injury that has the potential to become a high risk injury is a problem. Coaches who are well educated regarding the safety aspects of sports are thus aware of the potential for injury and are more likely to prevent injuries. Kimiecik suggests that administrators from youth sports organizations agree that coaches' education is important, but most of their coaches are volunteers and making coaching education mandatory may discourage volunteers from coaching. It is critical that youth sports coaches be knowledgeable about conditioning, sports skills, physiology, and psychology, but it is difficult to convince administrators and communities to implement a formal training program.

Rowe and Miller (1991) also investigated the qualifications of those responsible for the care, treatment, and rehabilitation of athletes. A 30 item inventory was distributed addressing anatomy, care and treatment, conditioning, diet/nutrition, equipment, and heat related factors to 441 public and private high schools in Georgia. Sixty-seven percent of those responsible for treating athletes were physical educators and coaches. Eighty-two percent of the respondents had taken a course in athletic injuries, 89 percent were currently certified in first aid and 83 percent had current CPR certification. The results of the study indicated that courses in athletic injuries and first aid and CPR can improve one's knowledge in recognizing subtle yet serious injuries. Thus, further assessing first aid and CPR knowledge in soccer coaches may provide additional information on a coach's ability to provide immediate health care for the safety of the athletes.

Summary

Review of the literature consistently demonstrates that coaches have an inadequate level of emergency medical education (Flint & Weiss, 1992; Rowe & Miller, 1991). Most literature has indicated coaches believe they are not adequately trained for providing first aid and, therefore, do not feel capable of administering emergency medical care (Hage & Moore, 1981). Based on these findings, educating coaches in first aid and cardiopulmonary resuscitation could enhance their knowledge, confidence and ability, as related to injury management. Thus, the purpose of this study was to assess the first aid knowledge and decision making of youth soccer coaches to ensure quality health care for youth soccer participants.

CHAPTER 3

Methods

The purpose of this study was to assess the first aid knowledge and decision making of coaches of youth soccer. This chapter provides a description of the methods and materials that were used in this study. The participants of the study, instrumentation, data collection procedures, and analysis of data are described within this chapter.

Participants

The participants for this study were recruited from District-II of the California Youth Soccer Association (CYSA-N). A total of 149 coaches of youth soccer participated in this study. Of the 149 coaches, 114 completed the First Aid Assessment test, 112 completed the Game Situation Data Sheet, and 109 completed the demographic information sheet. Eighty-five coaches were male and 24 were female. The mean years of coaching experience was 8.89 ($SD = 7.02$), with a range of 1-30 years. Twenty-four (21%) of coaches reported being currently certified in CPR and 31 (27%) reported being currently certified in first aid.

Instrumentation

First Assessment Test

The First Aid Assessment test was used to measure an individual's first aid knowledge. Ransone and Dunn-Bennett (1999) revised the American Red Cross First-Aid Assessment to assess the first aid knowledge of high school athletic coaches. The validity of the First Aid Assessment test was established by expert review to determine the most appropriate questions related to athletic competition. Dunn (1995) obtained the

original test that is currently used by the American Red Cross for determining proficiency after completion of the Basic First Aid and Sports Injury courses. The test in this study was modified to include updated information on CPR, specifically the compression to breathe ratio for child and adult. The test consisted of 38 multiple choice questions. The test assessed competency in six areas identified as responsibilities of individuals who provide first aid. The six areas are anatomy, care and treatment, prevention, assessment, equipment, and heat/cold related factors. A score of 80 percent or greater was required to pass (Ransone & Dunn-Bennett, 1999).

Game Situation Data Sheet

Flint and Weiss (1992) developed the Game Situation Data Sheet to assess a coach's individual decision making in hypothetical athletic situations. The Game Situation Data Sheet is composed of nine different athletic situations. The Game Situation Data Sheet asks the individual whether or not they would allow an athlete to return to competition and participants checked "Yes" or "No." The athletic situations included players of different ranking, such as starter, first off the bench, or bench warmer. In addition, the athletic situations involved a number of different game situations, such as close or blow out games, winning, and losing. The Game Situation Data Sheet in this study was modified to reflect soccer position and soccer situations.

Demographic Information Sheet

The demographic information sheet addressed years of coaching, age and class of the athletes, sex of coach, education level, and whether or not the participants have current first aid and CPR certification. The information provided was used to determine

if there were any differences in coaches' knowledge of first aid and injury prevention based upon years of coaching, educational degree, the type of position the coach held, age of the athletes he/she coached, and the gender of the athletes coached.

Data Collection Procedures

Before conducting the study, approval from San Jose State University Institutional Review Board-Human Subjects form was submitted (see Appendix A). E-mail addresses were obtained from individual league websites. Participants received an e-mail through Survey Monkey requesting their participation in this survey. A URL address was included in the email linking them directly to the survey on www.surveymonkey.com. The URL address sent the coaches to the website that contained a cover letter, consent form, First Aid Assessment test, Game Situation Data Sheet, and demographic information sheet (see Appendix B).

Two weeks after the first e-mail was sent, a follow up e-mail was distributed requesting participation in the study to boost responses. Two weeks after the follow up e-mail was sent, data was collected and analyzed and no other surveys were accepted for the study.

Analysis of Data

Data was analyzed using the computer program Microsoft® Excel® 2007. Descriptive statistics were used to analyze responses on the First Aid Assessment test and to assess demographic information. The independent variables are first aid and CPR certification, years of coaching experience, and education level. The dependent variables are the First Aid Assessment test and Game Situation Data Sheet.

A Pearson Product Correlation was used to determine whether coaches with more years of coaching experience scored higher on the First Aid Assessment test than coaches with fewer years of coaching experience.

A Chi-squared analysis was used to determine a difference when coaches return an injured athlete to competition based upon years of coaching experience. The 0.05 level was used for significance.

An ANOVA was used to determine whether coaches with a higher education level scored higher on the First Aid Assessment test. The 0.001 level was used for significance.

CHAPTER 4

Results

The purpose of this study was to assess the first aid knowledge of coaches of youth soccer and to assess the decision making of these coaches of youth soccer in hypothetical athletic situations involving competition and injured athletes. The results of this study are categorized into the following sections: 1) demographics, 2) descriptive statistics, and 3) statistical analysis.

Demographics

Coaches at the CYSA-N District-II were contacted via email about the need to participate in a survey. Five hundred sixty-four emails were sent out to soccer coaches using SurveyMonkey.com. One hundred forty-nine soccer coaches participated in the study for a response rate of 26 percent. Male participants comprised 78 percent (n=85) of the sample and female participants comprised 22 percent (n=24). Coaches who possessed a current first aid card were 31 (27%). Coaches who possessed a current CPR card were 24 (21%). Years of coaching experience ranged from first year coaches to those with more than 28 years of experience. Eighty-two percent of coaches who participated had a coaching license. Forty-eight percent (n=56) of coaches coached male teams and 52 percent (n=60) of coaches coached female teams. The Head Coach position consisted of the most responses at 62 percent (n=75); the Assistant coach was 23 percent (n=28) and the volunteer position was 8 percent (n=10). Seventy-five percent (n=82) of coaches surveyed possessed at least a bachelor's degree. A demographic profile is presented in Table 1.

Table 1
Demographic Profile

	n	% of Total Respondents
Gender		
Male	85	78
Female	24	22
Coaching Experience		
0-2 years	12	11
2-5 years	27	25
5-10 years	44	41
Over 10 Years	25	23
Position Type		
Head Coach	75	62
Assistant Coach	28	23
Volunteer	10	8
Education Level		
No degree	27	25
BA/BS	82	75
Advanced	32	29
Current First Aid	31	27
Current CPR	24	21
Coaching License	89	82

Descriptive Statistics

First Aid Assessment

One hundred and fourteen participants completed the First Aid Assessment test. Responses from the FAA were objectively scored. A score of 29 (80%) or higher was required to pass the test. Thirteen coaches (11.4%) achieved passing scores and 101 (88.6%) coaches failed the test. The scores ranged from 10 to 33. The mean score on the FAA for male participants was 27 (SD=3) with scores ranging from 20 to 33. The mean

score on the FAA for female participants was 26 (SD=2.6) with scores ranging from 18 to 31.

Game Situation Data Sheet

Coaches responded “Yes” or “No” to each of the nine items on the Game Situation Data Sheet. The Game Situation Data Sheet was completed by 112 (98%) of the 114 coaches. Table 2 indicates the frequency of responses to each of the game scenarios. Coaches returned an injured athlete 24 percent of the time. Coaches varied considerably based upon game situations when deciding to return a starter to play. In a game that the team was clearly winning, 10.7 percent of the coaches returned the starter, while when the team was clearly losing the game; only 36.6 percent of coaches returned the starter. However, when the game situation had their team down by two goals, 34.8 percent of the coaches returned the starter. In a clearly winning situation or clearly losing situation, 14.3 percent and 11.6 percent of coaches, respectively, returned a backup player. Similar to the close game situation with a starter, 43.8 percent of coaches returned a backup player when it was a close game situation. In a game where the team was clearly winning, 14.3 percent of the coaches returned an injured bench player, while in a game that the team was clearly losing, 17.0 percent of the coaches returned an injured backup player. When the game situation had the team down by one goal, 33.0 percent of coaches returned an injured backup player. Coaches’ decisions to return a bench player varied based upon game situation and varied from the decisions made for starters and backup players. The percentage of coaches that returned an injured athlete to

play varied not only by the game situation but the status (starter, backup, or bench player) of athlete involved.

Table 2
Frequency of Responses

Game Situation	Yes	No	Not Answered	Total
Player that is 3 rd off bench in a clearly losing situation	13	99	2	114
Starter in a clearly winning situation	12	100	2	114
Bench player in a clearly winning situation	16	96	2	114
Starter in a game that the team is down by 2 goals	39	73	2	114
Bench player in a game that the team is down by 1 goal	37	75	2	114
Backup player in a clearly winning situation	16	96	2	114
Starter in a clearly losing situation	41	71	2	114
Backup player in a close winning situation	49	63	2	114
Bench player in a clearly losing situation	19	93	2	114
Total	242	766	18	1026

Statistical Analysis

First Aid Assessment by First Aid and CPR Certification

Research question one looked at coaches who have first aid and CPR certification and their successful passing of the FAA. A score of 29 (80%) or higher was required to pass the FAA test. Thirteen coaches (11.4%) earned passing scores (Table 3). Of the 13 coaches that passed, five (38.5%) passed the FAA test possessing both current first aid and CPR certification, but five coaches (38.5%) passed the FAA test not possessing both current first aid and CPR certification. Twenty-two coaches have both current first aid and CPR certification, but 17 (77.3%) did not pass the FAA test. Seventy-seven (67.5%) coaches did not pass the FAA test and did not possess current first aid and CPR certification.

Table 3
Count of Certification & FAA Test

	DNT	Fail	Pass	Total
First aid Card				
No	35	77	6	118
CPR No	35	76	5	116
CPR Yes		1	1	2
First Aid Card				
Yes		24	7	31
CPR No		7	2	9
CPR Yes		17	5	22
Total	35	101	13	149

DNT=did not take

First Aid Assessment by Years of Coaching Experience

Research question two inquired if coaches with more years of coaching experience will score higher on the FAA than those with fewer years of coaching experience. Six coaches did not report the number of years of coaching experience and

were excluded from the analyses. The mean years of coaching experience of the 108 that reported coaching experience was 8.89 (SD=7.02) with a range of 1-30 years. A Pearson Product Correlation ($r=0.19$) was used to associate between years of coaching and FAA scores. No significant correlation was made. Coaches with more years of coaching experience did not score higher on the FAA test.

Game Situation Data Sheet by Years of Coaching

Research question three looked at whether there is a difference when coaches return an injured athlete to competition based upon years of coaching experience. Chi-square analyses were conducted on the nine game situations by years of coaching experience. Of the 112 coaches who completed the Game Situation Data Sheet, 31 did not state their years of coaching experience and were excluded from the analysis. Table 4 presents the Pearson Chi-Squared value and the probability for each of the situations. Coaches differed by years of coaching in returning a starter in a game when their team was down by two goals. Table 5 (Bench player in a Game that the Team is Down by 1 Goal) shows that more coaches than expected in the 5-10 years of coaching experience group withheld the bench player in a close game situation, while more coaches than expected in the 2-5 years of coaching experience group returned an injured bench player in the same situation.

In summary coaches with 5-10 years of coaching experience were more likely to keep an injured bench player from returning in a close game. However, coaches with 2-5 years of coaching experience were more likely to return an injured bench player in a

close contest. Coaches did not differ on the other eight game situations by years of coaching experience.

Table 4
Pearson Chi-Squared for Game Situation Data Sheet by Years of Coaching

Situation	Pearson χ^2 Value	df	p
Player that is 3 rd off bench in a clearly losing situation	1.809	3	0.835
Starter in a clearly winning situation	3.706	3	0.446
Bench player in a clearly winning situation	1.953	3	0.582
Starter in a game that the team is down by 2 goals	0.438	3	0.932
Bench player in a game that the team is down by 1 goal	10.590	3	0.014*
Backup player in a clearly winning situation	2.887	3	0.409
Starter in a clearly losing situation	0.641	3	0.887
Backup player in a close winning situation	3.994	3	0.262
Bench player in a clearly losing situation	1.877	3	0.598

*significant at the p=0.05 level

Table 5
Bench player in a Game that the Team is Down by 1 Goal

Years of Coaching		Game Situation Five		Total
		No	Yes	
0-2	Observed	5	2	7
	Expected	4.3	2.7	7
2-5	Observed	7	14	21
	Expected	13	8	21
5-10	Observed	26	8	34
	Expected	21	13	34
Over 10	Observed	12	7	19
	Expected	11.7	7.3	19
Total	Observed	50	31	81
	Expected	50	31	81

Educational Background by First Aid and CPR Certification

Research question four looked at the relationship between coaches with a higher educational level and possessing both first aid and CPR certification. Twelve percent (n=6) of coaches that have a bachelor's degree have both first aid and CPR certification. Twenty-one percent (n=7) of coaches with a graduate degree have both first aid and CPR certification. Thirty-three percent (n=9) of coaches had no degree had both first aid and CPR certification. Thirty-seven (74%) of coaches with a bachelor's degree did not have both first aid and CPR certification. Twenty-two (68.8%) of coaches with a graduate degree did not have both first aid and CPR certification and 17 (63%) of coaches with no

degree did not have first aid and CPR certification. Table 6 shows the breakdown of first aid and CPR card, and education background. Coaches with a higher education were not likely to have first aid and CPR certification.

Table 6
First aid and CPR Card and Educational Background

FA/CPR Card	Bachelor's	Graduate	None	Total
No: First Aid	38	23	17	78
No: CPR	37	22	17	76
Yes: CPR	1	1	0	2
Yes: First Aid	12	9	10	31
No: CPR	6	2	1	9
Yes: CPR	6	7	9	22
Total	50	32	27	109

FA=First aid

First Aid Assessment by the Educational Background of Coaches

Research question five looked at coaches with a higher educational level and their scores on the FAA test. The mean and standard deviations of FAA average scores by coaches' education background are presented in Table 7. A one-way ANOVA was used to determine if there was a difference between scores on the FAA test and the education background of the coaches. The ANOVA was significant $F(2, 106) = 6.93, p < 0.05$ (Table 8). Coaches with a higher education did score higher on the FAA test. A one-way ANOVA was used to determine if there was a difference between coaches with no degree, bachelor's degree, and FAA test. The ANOVA was significant $F(1, 75) = 6.48, p < 0.05$ (Table 9). A one-way ANOVA was used to determine if there was a difference between coaches with a bachelor's degree, a graduate degree, and scores on the FAA test. The ANOVA was not significant $F(1, 80) = 2.09, p < 0.05$ (Table 10).

Table 7

FAA Scores by Educational Background

	Count of Degree	Average of Score	SD of Score
None	27	66.47%	0.079
Bachelor's	50	71.26%	0.079
Graduate	32	73.68%	0.065
Unknown	40	7.24%	0.203
Total	149	53.73%	0.309

SD=standard deviation

Table 8

ANOVA for FAA test and Educational Background

	SS	df	MS	F	P-value
Between Groups	0.078	2	0.391	6.926	0.001
Within Groups	0.599	106	0.005		
Total	0.677	108			

Table 9

ANOVA for Coaches with No Degree and Bachelor's Degree

	SS	df	MS	F	P-value
Between Groups	0.040	1	0.040	6.478	0.012
Within Groups	0.466	75	0.006		
Total	0.506	76			

Table 10

ANOVA for Coaches with a Bachelor's Degree and Graduate Degree

	SS	df	MS	F	P-value
Between Groups	0.011	1	0.011	2.091	0.152
Within Groups	0.437	80	0.005		
Total	0.449	81			

CHAPTER 5

Discussion and Conclusion

The purpose of this study was to measure the first aid knowledge of coaches of youth soccer and assess the decision making of these coaches in determining the playing status of an injured athlete in hypothetical athletic injury situations. This chapter is organized into the following sections: 1) First Aid Assessment, 2) Game Situation Data Sheet, 3) Conclusion, and 4) Recommendations for Future Research.

First Aid Assessment

Thirteen coaches (11%) out of 149 coaches achieved passing scores on the First Aid Assessment test. Coaches of youth soccer have our children under their supervision for approximately 2-10 hours a week (Barron, 2004). Most youth sport organizations require that a parent sign a medical release form. Medical release forms are used in case a child needs to be treated at a hospital and their parents are not available. Coaches are the ones who will determine whether or not to call the parent, take the child to the hospital, or alert the emergency medical services if an injury occurs during a practice or game. Coaches of youth soccer are making medical decisions with limited medical knowledge needed to make to such decisions.

Of the 109 coaches who completed the demographic data, 31 reported having a current first aid card and 24 reported having a current CPR card. Of those 55 coaches who have current first aid and CPR certification only six passed the FAA. Being currently certified does not improve one's score on a first aid examination. The American Heart Association requires CPR recertification every two years and the

American Red Cross requires CPR renewal every year and first aid certification every three years. First aid re-certification enables a coach to practice manipulative skills and challenge one's first aid knowledge by taking a short written examination. If one does not practice the first aid skills that are taught during the first aid courses, one is unlikely to be able to recall the necessary skills when they are needed. CPR on the other hand is conducted more frequently and sees the need to review CPR skills on yearly basis. First aid certification should be done yearly, like CPR, and should be more comprehensive and challenging to enhance the chance that the knowledge is retained.

Similar results have been found in previous investigations. Barron (2004) reported fifteen (5%) of the 290 coaches that participated passed the FAA. Of those 15 coaches that passed five (33%) were currently certified in first aid and CPR. In another study, Ransone and Dunn-Bennett (1999) reported 38 (36%) of the 104 coaches that participated passed the FAA. Of those 104 high school coaches, 96 (92%) were currently certified in first aid and CPR. Rowe and Robertson (1986), developed and administered a first aid test to Alabama high school coaches. Only 34 (27%) of the 127 coaches tested earned a passing score. In 1991, Rowe and Miller administered the same first aid test to high school coaches in Georgia and 50 (38%) of the 130 coaches passed the first aid test. The results of these studies have found that a coach's score on a first aid examination does not appear to be enhanced by being currently first aid or CPR certified.

The coaches that did not pass the FAA test does not mean that they did not possess the information or are capable of handling a situation in which they would need to perform first aid skills. Some coaches could have been nervous taking the

examination. Although similar results were attained in previous studies, one big difference between the current study and the previous studies is the previous studies were done in a testing session or group session, whereas the current study was done using the internet. Coaches had more time and access to the internet to find the correct answers to the FAA test.

Coaches of youth soccer need to be able to not only prevent injuries from occurring, but they have to be able to perform basic first aid care for the injured athlete. Coaches are most likely to identify major injuries such as closed tibial fracture, due to the deformity and pain that is associated with such an injury, coaches know that further medical attention is needed and are able to provide help. There are many other major injuries and medical conditions that are not as obvious, such as respiratory illnesses. Coaches of youth soccer need to know when further medical attention is needed and be able to send for such help. The coaches need to be able to indentify an injury as being serious. Coaches may not be able to tell the difference between a sprain and a contusion. Additionally, coaches of youth soccer are not knowledgeable in determining if the athlete can return to participation. Many organizations do not have a set of protocols for when an athlete can return to participation following an injury.

Knowledge on the FAA test and years of coaching was not significantly different based upon years of coaching experience. More coaches were in the 5-10 year range with an average score of 72 percent. The coaches with over 10 years of coaching experience did average 73 percent on the FAA test, but a correlation analysis found that there was no significant difference between the groups. The coaches with over 10 years of experience

may have gained more injury prevention knowledge through coaching over the years. Those coaches that have been coaching less than ten years may have benefited from injury prevention techniques that they were exposed to during high school or college classes.

Educational background does not influence a coach's decision to obtain first aid and CPR certification. Coaches were divided into groups based upon their educational level. Coaches that had earned a high school diploma or an associated degree were grouped under the title "No Degree". Coaches that earned a bachelor's degree were grouped under "Bachelor's Degree" and those coaches that obtained a Master's or a Ph.D. were classified as having a "Graduate Degree". Coaches with no degree (70%) showed were more likely to have current first aid and CPR certification than those with an advanced degree.

There was significant difference among the educational background groups and the FAA test. The results of the ANOVA indicated there was a significant difference between all three groups and between the groups with no degree and bachelor's degree. General medical knowledge increases from no degree to bachelor's, but does not increase from college to a graduate degree. Advanced education may refine a person's ability to correctly answer questions on a test. An advanced degree does not increase a coach's knowledge; however, one reason for this non-significant result between bachelor's and graduate degree groups may be the type of education that one has received. Earning an advanced degree in chemistry or economics will not likely increase one's knowledge in the identification of injuries.

Game Situation Data Sheet

Coaches' decisions to return an injured athlete to competition are dependent upon the game situation and the status of player involved (starter, backup, or bench player). The results of the Game Situation Data Sheet in this study were similar to the results reported by Flint and Weiss (1992) and Barron (2004). Coaches are likely to return an injured starter to competition 10.7 percent, 36.6 percent, and 34.8 percent when the game situation is that their team is clearly winning, clearly losing, or in a close competition, respectively.

In a close game, coaches were 43.8 percent more likely to return an injured starter and backup player to the game than an injured bench player. A reason for these decisions by the coaches could be due to a role conflict. Many coaches feel that it is their main responsibility to win the game, and they would do anything to achieve that goal. A coach's responsibility is not only to win the competition but also to enhance the skills of each athlete. In a clearly losing situation, coaches were 14.3 percent more likely to return an injured bench player than a starter or backup player.

When a bench player is injured in a close game situation, coaches with five to ten years of coaching experience are more cautious about returning the athlete to competition compared to coaches with two to five years of coaching experience. Coaches with five to ten years of coaching experience may have relied on their observations and past experiences with children with respiratory illnesses. Coaches with two to five years of coaching lack preventable knowledge and may have transferred over to them thinking

that once a child had their breathing under control the child can return back to competition.

Conclusion

Results of this study indicated that, in general, coaches of youth soccer lack the first aid and injury prevention knowledge needed to effectively prevent, evaluate, and care for sporting injuries. Injury prevention and care needs to be addressed within the youth sporting environment. Youth coaches, administrators, parents, professionals (doctors/certified athletic trainers), and professional organizations (National Athletic Trainer's Association/California Athletic Training Association) all need to take an active role in the prevention and care of youth sport injuries.

Coaches need to take an active role in learning the necessary skills to aid them in injury prevention and care. Individual soccer leagues should provide programs that help improve their coaching techniques through scenario based programs. This may help a coach feel more comfortable when dealing with an injury situation.

The districts administrators are the ones that are in charge of developing the rules and regulations of the soccer leagues and should make it mandatory for all coaches in those leagues to obtain current first aid and CPR certification, as well as taking courses recognizing and preventing sports related injuries.

Parents should take an active role and demand that their children's coaches be knowledgeable in injury prevention and care. Certified athletic trainers (ATC) also need to take an active role in youth sports. Most youth sport programs do not have access to

an ATC. Athletic trainers can be a first aid liaison or teach injury prevention and care programs to youth coaches.

Recommendations for Future Research

The following recommendations are recommended for future research:

- 1) Administration of the survey to other youth sports such as Pop Warner football, cheerleading, baseball, and softball.
- 2) The use of sport specific decision making scenarios which may evoke a different response from coaches of other youth sports.
- 3) The development of an injury prevention and care program and the effectiveness of such a program.
- 4) Future research in concluding if the age divisions of the athletes play a role in a coaches' decision on returning an athlete back to competition.
- 5) Future research in looking at if the gender of the athletes play a role in a coach's decision on returning an athlete back to competition.

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APPENDIX A

Human-Subjects Institutional Review Board Approval



**Office of the Provost
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Graduate Studies & Research**

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To: Lynette Castro

From: Pamela Stacks, Ph.D.
Associate Vice President
Graduate Studies and Research

A handwritten signature in black ink, reading "Pamela Stacks".

Date: March 5, 2009

The Human Subjects-Institutional Review Board has approved your request to use human subjects in the study entitled:

"Assessment of First Aid Knowledge and Decision Making of Coaches of Youth Soccer"

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to all data that may be collected from the subjects. The approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Dr. Pamela Stacks, Ph.D. immediately. Injury includes but is not limited to bodily harm, psychological trauma, and release of potentially damaging personal information. This approval for the human subject's portion of your project is in effect for one year, and data collection beyond March 5, 2010 requires an extension request.

Please also be advised that all subjects need to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate, or withdrawal will not affect any services that the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact me at (408) 924-2427.

Protocol #S0902027

cc. Leamor Kahanov, 0054

The California State University:
Chancellor's Office
Bakersfield, Channel Islands, Chico,
Dominguez Hills, East Bay, Fresno,
Fullerton, Humboldt, Long Beach,
Los Angeles, Maritime Academy,
Monterey Bay, Northridge, Pomona,
Sacramento, San Bernardino, San Diego,
San Francisco, San José, San Luis Obispo,
San Marcos, Sonoma, Stanislaus

APPENDIX B

Survey Instrument

Assessment of First Aid Knowledge and Decision Making of Coaches

1. Welcome

Thank you for your willingness to participate in this survey. Your participation is important.

I am currently conducting a survey on the first aid knowledge and return to play decision of coaches of youth soccer. You will be asked to respond to three questionnaires. There are no anticipated risks associated with the participation in the study. There are no expected benefits associated with participation in the study, you may gain a better understanding of your knowledge of first aid and decision making. Although the results of this study may be published, no information that could identify you will be included.

Please take a few minutes of you time to complete this on-line survey. Clicking the "yes" button will allow you to access the survey. Continuing onto the survey will be constituted as consent to participate.

Your consent is being given voluntarily. You may refuse to participate in the entire study or in any part of the study. If you decide to participated in the study, you are free to withdrawal at any time without any negative effect on your relations with San Jose State University or with any other participating institutions or agencies. No service of any kind, to which you are otherwise entitled, will be lost of jeopardized if you choose to not participate.

Questions about this research may be addressed to Lynnette Castro (408)296-3692. Complaints about the research may be presented to Dr. Shirley Reekie, Chair of the Kinesiology Department at (408)924-3010. Questions about a research subjects' rights or research-related injury may be presented to Pamela Stacks, Ph.D., Associated Vice President, Graduate Studies and Research at (408)924-2427.

☐ Yes

☐ No

Assessment of First Aid Knowledge and Decision Making of Coaches

2. Part I First Aid Assessment

Please select the best answer.

Water should be

- ☐ Withheld during practices, available during games.
- ☐ Withheld during games, available during practices.
- ☐ Available only on hot days.
- ☐ Available at all times.

The behavior of the first aid provider

- ☐ Should be calm and reassuring.
- ☐ Should be hurried and tense.
- ☐ Does not matter because it has no effect on the injured athlete.
- ☐ Both a and b

Ice should always be used _____ after an injury occurs, unless otherwise directed by a physician or athletic trainer.

- ☐ After the first 48 hours
- ☐ During the first 48 hours
- ☐ During the first 24 hours only
- ☐ During the first 12 hours only

Shock is

- ☐ Not life-threatening.
- ☐ Possible with all type of injuries.
- ☐ Possible with head and heat-related injuries only.
- ☐ More likely in chronic injuries.

An athlete who is knocked unconscious may return to play if he or she

- ☐ Regains consciousness within 2 minutes.
- ☐ Presents no signs and symptoms of a head injury.
- ☐ Is cleared by a physician.
- ☐ Feels capable of returning to play.

Assessment of First Aid Knowledge and Decision Making of Coaches

Twisting or stretching a joint beyond its normal range of motion is the most common cause of

- ☐ Sprains.
- ☐ Fractures.
- ☐ Strains.
- ☐ Contusions.

Heat stroke can result from

- ☐ Too little salt.
- ☐ Too high carbohydrates.
- ☐ Dehydration.
- ☐ Hyperhydration.

A musculotendinous tissue injury is a

- ☐ Fracture.
- ☐ Sprain.
- ☐ Strain.
- ☐ Contusion.

Contusions occur most frequently to the

- ☐ Chest.
- ☐ Quadriceps.
- ☐ Abdomen.
- ☐ Shin.

The greatest danger for an athlete who has mononucleosis is

- ☐ Seizures.
- ☐ A punctured liver.
- ☐ A ruptured spleen.
- ☐ Shock.

Proper treatment for chronic problems, such as shin splints, is

- ☐ Ice before activity, ice after an activity.
- ☐ Heat before activity, heat after activity.
- ☐ Ice before activity, heat after activity.
- ☐ Heat before activity, ice after activity.

Assessment of First Aid Knowledge and Decision Making of Coaches

Standard first aid for a sprained ankle does not include

- ☐ Ice.
- ☐ Compression.
- ☐ Percussion.
- ☐ Elevation.

Pregame meals should contain foods

- ☐ High in carbohydrates.
- ☐ High in protein.
- ☐ Low in carbohydrates.
- ☐ Balanced in protein and carbohydrates.

Mouth guards protect an athlete against

- ☐ Tooth fractures and tongue lacerations.
- ☐ Jaw fractures.
- ☐ Concussions.
- ☐ Both a and c

Characteristics of heat exhaustion include

- ☐ Slow pulse.
- ☐ Pale, cool, clammy skin.
- ☐ Red, hot, sweaty skin.
- ☐ Bounding pulse.

Heat stroke is

- ☐ Preventable.
- ☐ Unpreventable.
- ☐ Not life-threatening.
- ☐ Seldom seen in athletics.

Heat stroke is best prevented by

- ☐ Limited salt intake.
- ☐ Limited water breaks.
- ☐ Unlimited water breaks.
- ☐ No way to prevent it.

Assessment of First Aid Knowledge and Decision Making of Coaches

Dressings and bandages are used to

- ☐ Reduce pain.
- ☐ Reduce internal bleeding.
- ☐ Help control bleeding and prevent infection.
- ☐ Make it easier to move the injured athlete.

You have tried to control bleeding with direct pressure and elevation, but bleeding does not stop. Where would you apply pressure to slow the flow of blood to a wound on the forearm?

- ☐ Outside of the arm midway between the shoulder and elbow
- ☐ On the inside of the elbow
- ☐ Inside of the arm midway between the shoulder and elbow
- ☐ Any of the above will slow the flow of blood

How can you reduce the risk of disease transmission when caring for open, bleeding wounds?

- ☐ Wash your hands immediately after giving first aid
- ☐ Avoid direct contact with blood and other body fluids
- ☐ Use protective barriers such as gloves or plastic wrap
- ☐ All of the above

Which is the first step in caring for bleeding wounds?

- ☐ Apply direct pressure on the wound with a clean or sterile dressing.
- ☐ Apply pressure at a pressure point.
- ☐ Apply bulky dressing to reinforce blood-soaked bandages
- ☐ Elevate the wound above the heart

What should you do if you think an athlete has internal bleeding?

- ☐ Apply heat to the injured area.
- ☐ Call your local emergency phone number for help
- ☐ Place the victim in a sitting position
- ☐ Give fluids to drink to replace blood loss

Assessment of First Aid Knowledge and Decision Making of Coaches

Which should be part of your care for severely bleeding open wound?

- ☐ Allow the wound to bleed in order to cleanse it and minimize infection
- ☐ Apply direct pressure and elevate the injured area, if no broken bones
- ☐ Use a tourniquet to stop all blood flow
- ☐ Both b and c

After being tackled, an athlete does not get up. The conscious athlete is face down and appears badly hurt. First, send someone for help. Then you,

- ☐ Roll the athlete to his side, in case he starts to vomit.
- ☐ Roll the athlete to his back and elevate the head and chest.
- ☐ Position the athlete so he is in a comfortable position.
- ☐ Have the athlete remain still.

Which should you do when caring for someone having a seizure?

- ☐ Remove nearby objects that might cause injury
- ☐ Place small object, such as a rolled-up piece of cloth between the individual's teeth
- ☐ Try to hold the person still
- ☐ All of the above

Generally, a splint should be

- ☐ Loose, so that the injured athlete can still move the injured limb.
- ☐ Snug, but not so tight that it slows circulation.
- ☐ Tied with fasteners directly over the injured area.
- ☐ None of the above.

An athlete who is diabetic is drowsy and seems confused. He is not sure if he took his insulin today. What should you do?

- ☐ Suggest he rest for an hour or so
- ☐ Tell him to go take his insulin
- ☐ Give him some sugar
- ☐ Both a and b

Assessment of First Aid Knowledge and Decision Making of Coaches

Two soccer players collide on the field. Although there is no visible bleeding, the upper left leg of on player is very red and swelling fast. She probably has what type of injury?

- ☐ Abrasion
- ☐ Bruise
- ☐ Strain
- ☐ Sprain

When caring for an athlete with hypothermia, you should

- ☐ Rewarm the body gradually.
- ☐ Remove wet clothes.
- ☐ Give warm fluids if fully conscious.
- ☐ All of the above.

What should you do for an athlete who is experiencing heat exhaustion?

- ☐ Force the athlete to drink lots of cool water
- ☐ Get the athlete into a cooler environment
- ☐ Have the athlete rest until the feeling passes
- ☐ All of the above

An athlete has a severe muscle cramp in the calf. Proper care would be to

- ☐ Bend the knee and point the toes and foot.
- ☐ Bend the knee and flex toes and foot.
- ☐ Straighten the knee and point the toes and foot.
- ☐ Straighten the knee and flex the toes and foot.

An athlete's front teeth are knocked out during practice. The teeth should be

- ☐ Washed in water and replaced in the sockets.
- ☐ Stored in saline until dentist can replace.
- ☐ Stored in milk until dentist can replace.
- ☐ Any of above is acceptable.

Assessment of First Aid Knowledge and Decision Making of Coaches

An athlete comes to you after being stepped on by an opponent's spikes. The type of injury you suspect is a(n)

- ☐ Abrasion.
- ☐ Puncture.
- ☐ Avulsion.
- ☐ Laceration.

Before attempting to resuscitate an athlete using CPR, which of the following conditions must exist?

- ☐ Dilated pupils
- ☐ Absence of pulse
- ☐ Unconsciousness
- ☐ Irregular respirations

At what rate should chest compression be performed during CPR efforts on a child?

- ☐ 70 compression per minute
- ☐ 100 compressions per minute
- ☐ 120 compressions per minute
- ☐ 80 compressions per minute

What is the breath (ventilation) to compression ratio when performing one rescuer CPR on a child?

- ☐ 5 compressions to 1 ventilation
- ☐ 15 compressions to 2 ventilations
- ☐ 30 compressions to 2 ventilations
- ☐ 10 compressions to 2 ventilations

The first action that should be taken when approaching a collapsed, injured athlete is to

- ☐ Move the athlete off of the playing surface.
- ☐ Determine responsiveness.
- ☐ Check for breathing.
- ☐ Check for pulse.

Assessment of First Aid Knowledge and Decision Making of Coaches

Complications which may occur as a result of external chest compressions when properly performed include

- ☐ Rib and sternum fractures.
- ☐ Punctured lungs and liver lacerations.
- ☐ Both a and b
- ☐ None of the above

Assessment of First Aid Knowledge and Decision Making of Coaches

3. Part II Game Situation Data

Please mark "yes" or "no" on returning athlete to the game.

During the last 10 minutes in the game with your team clearly losing, your backup defender takes a hit to the knee by the ball. The knee is swollen and is showing some signs of a bruise. The player is eager to return and the injury only causes a minor limp.

Return to Play

- ☐ Yes
☐ No

Your starting goalie, during a game you are winning easily, gets a hand in the way of a hard pass and hyperextends an elbow. It is checked and taped. The player is eager to get back on the field.

Return to Play

- ☐ Yes
☐ No

One of your bench players, who rarely sees the field, finally gets a chance to play during a game you are winning easily. After two minutes on the field the player suffers a hamstring strain. It doesn't appear to be a serious problem after some treatment on the bench. The player is eager to return and shows that the muscle injury only causes a minor limp.

Return to Play

- ☐ Yes
☐ No

In a game in which you are only down by 2 goals, your starting forward goes down with a sprained ankle. It appears to be a mild sprain and taping had given it some support. The player assures you everything is fine and can perform cuts and turns with only minor discomfort.

Return to Play

- ☐ Yes
☐ No

Assessment of First Aid Knowledge and Decision Making of Coaches

The game is close and your team is down by 1 goal. You have a "bench player" on the field replacing a tired starter when the bench player begins hyperventilating. After being helped at the bench, the indicated everything is okay.

Return to Play

☐ Yes

☐ No

Your team is winning when your backup center goalie comes down awkwardly on an opponents foot after saving a goal. It appears as if the goalie has a strained Achilles tendon. After being checked and a mild strain indicated, taping is used for support. The player appears eager to play again.

Return to Play

☐ Yes

☐ No

Your starting sweeper slides after a loose ball and bruises the right hip. The game is far out of your team's reach at this point. The hip is slightly swollen and is showing signs of a bruise, but the player can move fairly well without too much problem. The player indicated a readiness to return to the game.

Return to Play

☐ Yes

☐ No

With 10 minutes to go in a tie game and your starting right wing needs a rest. The backup player at that position had gone out with a strained lower back muscle. The backup player has been moving around behind the bench and appears fine. It appears to be only a mild strain and is not causing the player a great deal of problems. The backup player wants to play again in the game.

Return to Play

☐ Yes

☐ No

Assessment of First Aid Knowledge and Decision Making of Coaches

In a losing cause, you want to platoon in all the players who have seen less than 10 minutes in the game. One player who played very briefly early in the game, but suffered a groin pull. The muscle strain appears to be mild and is not causing more than some minor discomfort at this point. The player wants a chance to play more in the game.

Return to Play

☐ Yes

☐ No

Assessment of First Aid Knowledge and Decision Making of Coaches

4. Part III Demographic Information

Please provide the following information in the indicated spaces.

Class

Age Division

Sex of athletes

☐ Male

☐ Female

Coaches' gender

☐ Male

☐ Female

Type of Position

☐ Head Coach

☐ Assistant Coach

☐ Volunteer

☐ Other (please specify)

Years of Coaching Experience:

Do you have a B.S. or B.A.?

☐ No

☐ Yes (major)

Do you have an M.S. M.A. or PhD degree?

☐ No

☐ Yes (field of study)

Assessment of First Aid Knowledge and Decision Making of Coaches

Please specify any additional first aid or emergency medical training you have (EMT, ATC, Paramedic, etc).

Do you possess a First Aid certification card?

☐ No

☐ Yes (date of certification and organization)

Do you possess a current cardiopulmonary resuscitation (CPR) card?

☐ No

☐ Yes (date of certification and organization)

Do you currently possess a Coaching License?

☐ No

☐ Yes (please list)

Assessment of First Aid Knowledge and Decision Making of Coaches

5. End of Survey

Thank you for participating in this on-line survey.